

App. Serial No.: 10/092,933

Atty. Docket No.: 0003-029

IN THE CLAIMSRECEIVED
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Please amend the claims as follows:

1. (currently amended) A ventilation flow control unit comprising:
a plenum;
a flow controller mounted to said plenum;
an isolation valve fixed to said plenum to selectively block the flow of air between
said plenum and said flow controller; and
a flow sensor mounted to said plenum; and
wherein said plenum, said flow controller, said isolation valve, and said flow sensor
are preassembled to form said ventilation flow control unit, thereby enabling said
ventilation flow control unit ~~can~~ to be installed in an HVAC system as a single
unit.
2. (original) A ventilation flow control unit according to Claim 1, wherein said sensor is
mounted in a duct section fixed between said plenum and said flow controller.
3. (canceled)
4. (previously presented) A ventilation flow control unit according to Claim 1, wherein
the leakage of said isolation valve is no more than one percent.
5. (previously presented) A ventilation flow control unit according to Claim 1, wherein
said isolation valve comprises a damper.
6. (original) A ventilation flow control unit according to Claim 5, wherein said damper
is a fixed blade damper.

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7. (currently amended) A ventilation flow control unit comprising:

- a plenum;
 - a flow controller mounted to said plenum;
 - a flow sensor mounted to said plenum;
 - a thermal coil fixed to said plenum, for affecting the temperature of air passing through said ventilation flow control unit; and
 - an automatic valve connected with at least one fluid line of said thermal coil; and
- wherein said plenum, said flow controller, said flow sensor, said thermal coil, and said automatic valve are preassembled to form said ventilation flow control unit, thereby enabling said ventilation flow control unit can to be installed in an HVAC system as a single unit.

8. (original) A ventilation flow control unit according to Claim 7, wherein said thermal coil is mounted to an open end of said plenum opposite said flow controller.

9. (previously presented) A ventilation flow control unit according to Claim 7, wherein said at least one fluid line of said thermal coil is mounted to said plenum.

10-11. (canceled)

12. (previously presented) A ventilation flow control unit according to Claim 48, wherein said protection bracket includes:

- a base defining an opening to facilitate the passage of a valve stem;
- a first riser extending from a first edge of said base; and
- a second riser extending from a second edge of said base opposite said first edge.

13. (previously presented) A ventilation flow control unit according to Claim 7, wherein said plenum is insulated.

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14. (currently amended) A ventilation flow control unit comprising:

a plenum;

a flow controller mounted to said plenum;

a thermal coil with at least one automatic fluid valve;

a flow sensor mounted to said plenum;

an electrical disconnect; and

a voltage converter electrically coupled to receive electrical power from said

disconnect, for converting a first voltage received from said disconnect to a

second lower voltage and providing said lower voltage to said automatic fluid valve; and

wherein said plenum, said flow controller, said thermal coil, said flow sensor, said electrical disconnect, and said voltage controller are preassembled to form said ventilation flow control unit, thereby enabling said ventilation flow control unit to be installed in an HVAC system as a single unit.

15. (original) A ventilation flow control unit according to Claim 14, wherein said electrical disconnect is mounted on said plenum.

16. (canceled)

17. (previously presented) A ventilation flow control unit according to Claim 14, wherein said converter provides low voltage to said flow controller.

18-21. (canceled)

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22. (currently amended) A method of installing a ventilation flow control unit, comprising:

~~assembling a~~ preassembling said flow control unit by mounting a flow controller to a duct, mounting a flow sensor to said duct, and mounting a thermal coil to said duct including securing at least one fluid line of said thermal coil to said duct and mounting an automatic valve in said fluid line; and
installing said ~~assembled~~ preassembled flow control unit in ~~a ventilation~~ an HVAC system.

23-25. (canceled)

26. (currently amended) A method of installing a ventilation flow control unit, comprising:

~~assembling a~~ preassembling said flow control unit by mounting a flow controller to a duct, mounting a flow sensor to said duct, mounting a flow straightener to said duct adjacent said flow sensor, and mounting an electrical disconnect to said duct; and
installing said ~~assembled~~ preassembled flow control unit in ~~a ventilation~~ an HVAC system.

27. (currently amended) A method of installing a ventilation flow control unit according to Claim 26, wherein said step of ~~assembling~~ preassembling said flow control unit further includes mounting an electrical converter to said duct for converting a voltage from said electrical disconnect to a second lower voltage.

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28. (currently amended) A method of installing a ventilation flow control unit comprising:

~~assembling a preassembling~~ said flow control unit by mounting a flow controller to a duct, mounting a flow sensor to said duct, mounting a thermal coil to said duct, and mounting an isolation valve to said duct, said isolation valve selectively blocking the flow of air between said duct and said flow controller; and installing said ~~assembled~~ preassembled flow control unit in ~~a ventilation~~ an HVAC system.

29. (canceled)

30. (currently amended) A method of installing a ventilation flow control unit according to Claim 58, wherein said step of ~~assembling~~ preassembling said flow control unit includes mounting an electrical converter to said duct.

31. (currently amended) A method of installing a ventilation flow control unit according to Claim 30, wherein said step of ~~assembling~~ preassembling said flow control unit includes electrically coupling said flow controller to said electrical converter.

32. (currently amended) A method of installing a ventilation flow control unit according to Claim 30, wherein said step of ~~assembling~~ preassembling said flow control unit includes: mounting an automatic valve to a fluid line of said thermal coil to control the flow of fluid through said fluid coil; and electrically coupling said automatic valve to said electrical converter.

33. (currently amended) A method of installing a ventilation flow control unit according to Claim 32, wherein said step of ~~assembling~~ preassembling said flow control unit includes electrically coupling said flow controller to said electrical converter.

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34. (previously presented) A ventilation flow control system comprising:
- a first flow control unit for controlling the flow of air into a room, said first flow control unit including a duct, a flow controller mounted to said duct, and a sensor mounted to said duct;
 - a second flow control unit for controlling the flow of air out of said room, said second flow control unit including a duct, a flow controller mounted to said duct, and a sensor mounted to said duct; and
 - a control unit for receiving feedback signals from said sensors and providing control signals to said flow controllers; and wherein
- at least one of said first and second flow control units includes an isolation valve.

35. (original) A ventilation flow control system according to Claim 34, wherein said first flow control unit further includes a thermal coil mounted to said duct of said first flow control unit.

36. (canceled)

37. (previously presented) A ventilation flow control system according to Claim 34, wherein both of said first and second flow control units include an isolation valve.

38. (original) A ventilation flow control system according to Claim 34, wherein at least one of said first and second flow control units include an electrical disconnect.

39. (original) A ventilation flow control system according to Claim 38, wherein said at least one of said first and second flow control units further includes an electrical converter for converting a voltage from said electrical disconnect to a lower voltage.

40. (original) A ventilation flow control system according to Claim 34, further comprising a third flow control unit for controlling the flow of air out of said room, said third flow control unit including a duct, a flow controller mounted to said duct, and a sensor mounted to said duct.

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41. (original) A ventilation flow control system according to Claim 40, wherein said control unit receives feedback signals from and provides control signals to said third flow control unit.

42. (original) A ventilation flow control system according to Claim 41, wherein:
said first flow control unit is mounted in an air supply duct;
said second flow controller is mounted in an air return duct; and
said third flow control unit is mounted in an exhaust duct.

43-44. (canceled)

45. (currently amended) A method of installing a ventilation flow control unit according to Claim 22, wherein said step of assembling preassembling said flow control unit further includes mounting an isolation valve to said duct to selectively block the flow of air between said duct and said flow controller.

46. (previously presented) A ventilation flow control unit according to Claim 1, wherein said plenum, said flow controller, and said isolation valve are arranged in a straight-through configuration such that air can flow generally straight through said ventilation flow control unit.

47. (previously presented) A ventilation flow control unit according to Claim 1, further comprising a flow straightener mounted to said plenum adjacent said flow sensor, said flow straightener reducing the turbulence of air flowing past said flow sensor.

48. (previously presented) A ventilation flow control unit according to Claim 7, further comprising a protection bracket mounted to protect said automatic valve from damage during transportation and installation of said ventilation flow control unit.

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49. (previously presented) A ventilation flow control unit according to Claim 7, wherein said plenum, said flow controller, and said thermal coil are arranged in a straight-through configuration such that air can flow generally straight through said ventilation flow control unit.

50. (previously presented) A ventilation flow control unit according to Claim 7, further comprising a flow straightener mounted to said plenum adjacent said flow sensor, said flow straightener reducing the turbulence of air flowing past said flow sensor.

51. (previously presented) A ventilation flow control unit according to Claim 17, wherein said plenum, said flow controller, and said thermal coil are arranged in a straight-through configuration such that air can flow generally straight through said ventilation flow control unit.

52. (previously presented) A ventilation flow control unit according to Claim 14, further comprising a flow straightener mounted to said plenum adjacent said flow sensor, said flow straightener reducing the turbulence of air flowing past said flow sensor.

53. (currently amended) A method of installing a ventilation flow control unit comprising:

~~assembling a~~ preassembling said flow control unit by mounting a flow controller to a duct, mounting a flow sensor to said duct, and mounting an isolation valve to said duct to selectively block the flow of air between said duct and said flow controller; and

installing said ~~assembled~~ preassembled flow control unit in ~~a ventilation an HVAC~~ system.

54. (currently amended) A method of installing a ventilation flow control unit according to Claim 53, wherein said step of ~~assembling~~ preassembling said flow control unit further includes mounting a flow straightener to said duct adjacent said flow sensor.

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55. (previously presented) A method of installing a ventilation flow control unit according to Claim 22, wherein said step of mounting an automatic valve in said fluid line includes mounting a protective bracket around said automatic valve.

56. (currently amended) A method of installing a ventilation flow control unit according to Claim 22, wherein said step of ~~assembling~~ preassembling said flow control unit further includes mounting a flow straightener to said duct adjacent said flow sensor.

57. (canceled)

58. (currently amended) A method of installing a ventilation flow control unit according to Claim 28, wherein said step of ~~assembling~~ preassembling said flow control unit includes mounting an electrical disconnect to said duct.

59. (currently amended) A method of installing a ventilation flow control unit according to Claim 28, wherein said step of ~~assembling~~ preassembling said flow control unit further includes mounting a flow straightener to said duct adjacent said flow sensor.

60. (currently amended) A ventilation flow control unit comprising:
a plenum;
a flow controller mounted to said plenum;
a flow sensor mounted to said plenum;
a flow straightener mounted to said plenum adjacent said flow sensor, said flow straightener reducing the turbulence of air flowing past said flow sensor; and
an electrical disconnect; and
wherein said plenum, said flow controller, said flow sensor, said flow straightener, and said electrical disconnect are preassembled to form said ventilation flow control unit, thereby enabling said ventilation flow control unit ~~can~~ to be installed in an HVAC system as a single unit.

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61. (previously presented) A ventilation flow control system comprising:

- a first flow control unit mounted in an air supply duct for controlling the flow of air into a room, said first flow control unit including a duct, a flow controller mounted to said duct, and a sensor mounted to said duct;
- a second flow control unit mounted in an air return duct for controlling the flow of air out of said room, said second flow control unit including a duct, a flow controller mounted to said duct, and a sensor mounted to said duct;
- a third flow control unit mounted in an exhaust duct for controlling the flow of air out of said room, said third flow control unit including a duct, a flow controller mounted to said duct, and a sensor mounted to said duct; and
- a control unit for receiving feedback signals from said sensors and providing control signals to said flow controllers.

62. (previously presented) A ventilation flow control system according to Claim 61, wherein said first flow control unit further includes a thermal coil mounted to said duct of said first flow control unit.

63. (previously presented) A ventilation flow control system according to Claim 61, wherein at least one of said flow control units includes an isolation valve.

64. (previously presented) A ventilation flow control system according to Claim 63, wherein at least two of said flow control units include an isolation valve.

65. (previously presented) A ventilation flow control system according to Claim 64, wherein all three of said control units include an isolation valve.

66. (previously presented) A ventilation flow control system according to Claim 61, wherein at least one of said flow control units includes an electrical disconnect.

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67. (previously presented) A ventilation flow control system according to Claim 66, wherein said at least one of said flow control units further includes an electrical converter for converting a voltage from said electrical disconnect to a lower voltage.

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INTERVIEW SUMMARY

A telephone interview was held July 14, 2008 to discuss the merits of this application. Examiner Marc Norman and Applicants' attorney Larry E. Henneman, Jr. participated in the interview. Applicants thank Examiner Norman for extending the interview and for his constructive assistance during the interview.

The Haessig reference was discussed. Mr. Henneman pointed out there was no indication in Haessig that the components of a flow control unit were "installed as a single unit," as recited in Claim 1. Mr. Henneman also pointed out that the preassembly of the components of the flow control unit was not obvious, at least because the components are customarily installed by workers from several different trades including, but not limited to plumbers, sheet metal workers, electricians, and electronic controls technicians. Examiner Norman indicated that there was still an issue with the term "unit," in that the system of Haessig might be fairly considered "a unit."

Examiner Norman and Mr. Henneman collaborated to develop claim language that would resolve the "unit issue" and, as a result, overcome the rejections over the Haessig reference. In particular, it was agreed that the following language would overcome the rejections over Haessig:

... wherein [the previously recited elements of the claim] are preassembled to form said ventilation flow control unit, thereby enabling said ventilation flow control unit to be installed in an HVAC system as a single unit.

Examiner Norman agreed that this language would overcome the obviousness rejections over Haessig, but indicated that an updated search and consideration would be required before a final indication of allowable subject matter could be given.

The restriction of Claims 61-67 was also discussed. Mr. Henneman pointed out that Claim 61 was added to accept subject matter indicated to be allowable in the prior office action. In particular, Claim 61 was added to combine the limitations of indicated allowable Claim 42, base Claims 34, and intervening Claims 40 and 41. Examiner Norman indicated that restriction of Claims 61-67 may have been in error.